

REMARKS

The present application was filed on May 23, 2007 with claims 1 through 30. Claims 1-30 are presently pending in the above-identified patent application. Claims 1-3, 5, 12, 15-17, 19, 25, 27, and 30 are proposed to be amended herein.

5 In the Office Action, the Examiner objected to claim 25 due to indicated informalities, and rejected claims 1-30 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner rejected claims 1, 4, 8-10, 12, 13, 15, 18, 22, 23, and 25-30 under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. (United States
10 Patent Number 7,352,688) in view of Ma et al. (United States Publication Number 2007/0064586), rejected claims 2, 5, 6, 11, 16, 19, 20, and 24 under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Ma, and further in view of Shattil (United States Patent Publication Number 2004/0141548), rejected claims 3, 7, 17, and 21 under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Ma, and further in view of Zhuang et
15 al. (United States Patent Publication Number 2003/0123381), and rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Ma, and further in view of Jia et al. (United States Patent Number 7,103,325).

Formal Objections

20 Claim 25 was objected to due to because it was not found to be amended as alleged.

Applicants note that claim 25 was amended to add a period at the end of the cited claim.

Thus, Applicants request that the cited objection be withdrawn.

Section 112 Rejections

25 Claims 1-30 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner asserts that it is not clear whether the “each subcarrier group” is in reference to each of the “plurality of subcarrier subgroups” or the “set of a plurality of subcarriers”, and that there is insufficient antecedent basis for the
30 limitation “said plurality of subcarrier groups.”

Applicants note that the claims have been amended to correct the antecedent basis of the cited term and to address the Examiner's concerns. Applicants respectfully request that the section 112 rejections be withdrawn.

Independent Claims 1, 15, 27 and 30

5 Independent claims 1, 15, 27 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Perahia et al. in view of Ma et al. Regarding claim 1, the Examiner acknowledges that Perahia may have failed to disclose each of said long training symbols to be transmitted on each of said N transmit antennas having two or more portions, each of said N transmit antennas having a set of a plurality of subcarriers, wherein each of said sets of said
10 plurality of subcarriers are grouped into a plurality of subcarrier subgroups, wherein each subcarrier subgroup comprises two or more adjacent subcarriers and wherein each portion of each long training symbol is transmitted on a different transmit antenna in a given time interval using a subcarrier subgroup. The Examiner asserts, however, that Ma discloses transmitting a symbol (e.g. header symbol) in which subcarriers of a header OFDM symbol are divided into a
15 set of subcarriers of each plurality of antennas, with each antenna transmitting the header symbol only on the respective set of subcarriers (i.e., each antenna has a set of subcarriers different from others) (paragraphs [0017]-[0018]).

Applicants note that Ma teaches that "sub-carriers of a header OFDM symbol are divided into a *non-contiguous set of sub-carriers* for each of a plurality of antennas." (Paragraph
20 [0030]; emphasis added; see, also, FIG. 5 and paragraphs [0031], [0034], [0090], and [0116]-[0117].) Independent claims 1 and 15 have been amended to require transmitting a legacy preamble having at least one long training symbol, and at least one additional long training symbol on each of said N transmit antennas, each of said long training symbols having a plurality of subcarriers, wherein said subcarriers are grouped into a plurality of subcarrier
25 subgroups, and *wherein each subcarrier subgroup comprises two or more adjacent subcarriers* and is transmitted on a different transmit antenna in a given time interval. Independent claims 27 and 30 have been amended to require receiving a legacy preamble having at least one long training symbol and an indication of a duration of a transmission of said data, and at least one additional long training symbols on each of said N transmit antennas, each of said long training
30 symbols having a plurality of subcarriers, wherein said subcarriers are grouped into a plurality of subcarrier subgroups, and *wherein each subcarrier subgroup comprises two or more adjacent*

subcarriers and is transmitted on a different transmit antenna in a given time interval.

Thus, Perahia et al. and Ma et al., alone or in combination, do not disclose or suggest transmitting a legacy preamble having at least one long training symbol, and at least one additional long training symbol on each of said N transmit antennas, each of said long training symbols having a plurality of subcarriers, wherein said subcarriers are grouped into a plurality of subcarrier subgroups, and wherein each subcarrier subgroup comprises two or more adjacent subcarriers and is transmitted on a different transmit antenna in a given time interval, as required by independent claims 1 and 15, as amended, and do not disclose or suggest receiving a legacy preamble having at least one long training symbol and an indication of a duration of a transmission of said data, and at least one additional long training symbols on each of said N transmit antennas, each of said long training symbols having a plurality of subcarriers, wherein said subcarriers are grouped into a plurality of subcarrier subgroups, and wherein each subcarrier subgroup comprises two or more adjacent subcarriers and is transmitted on a different transmit antenna in a given time interval, as required by independent claims 27 and 30, as amended.

Dependent Claims 2-14, 16-26 and 28-29

Claims 2-14, 16-26 and 28-29 are dependent on claims 1, 15, and 27, respectively, and are therefore patentably distinguished over Perahia et al., Ma et al., Shattil, Zhuang et al., and Jia et al., alone or in any combination, because of their dependency from amended independent claims 1, 15, and 27 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

Conclusion

All of the pending claims following entry of the amendments, i.e., claims 1-30, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

A handwritten signature in cursive script that reads "Kevin M. Mason".

Date: April 6, 2010

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